

SCIENCE ADVISORY BOARD

Jane Lubchenco, Ph.D.

Under Secretary of Commerce for Oceans & Atmosphere

NOAA Administrator

National Oceanic and Atmospheric Administration

July 16, 2012



NOAA-wide: Leadership Changes, iPhones & iPads

Dr. Becky Blank
Acting Secretary Of
Commerce



Dr. David Titley
Deputy Under
Secretary
For Operations



Margaret Spring
Principal Deputy
Under Secretary
for Operations



Renee Stone
Chief of Staff



**Dr. Jainey
Bavishi**
Director of
External Affairs



Ciaran Clayton
Director of
Communications



Laura Furgione
Acting AA for
NWS



**Joanne
Benzuli-Crane**
Acting Chief
Financial Officer



RIO +20

DAS for International Fisheries Russell Smith led the NOAA delegation

- ✔ US Center Side Event: Sustainable Fisheries
- ✔ GEF Side Event: Tuna Fisheries
- ✔ Global Oceans Forum Event: Fisheries panel
- ✔ US Center Side Event: Disaster Risk Reduction
- ✔ UNEP marine debris panel

OAR/PMEL's Richard Feely

- ✔ Oceans Day: Panel on OA & Climate Change

International Coordinating Office for Ocean Acidification

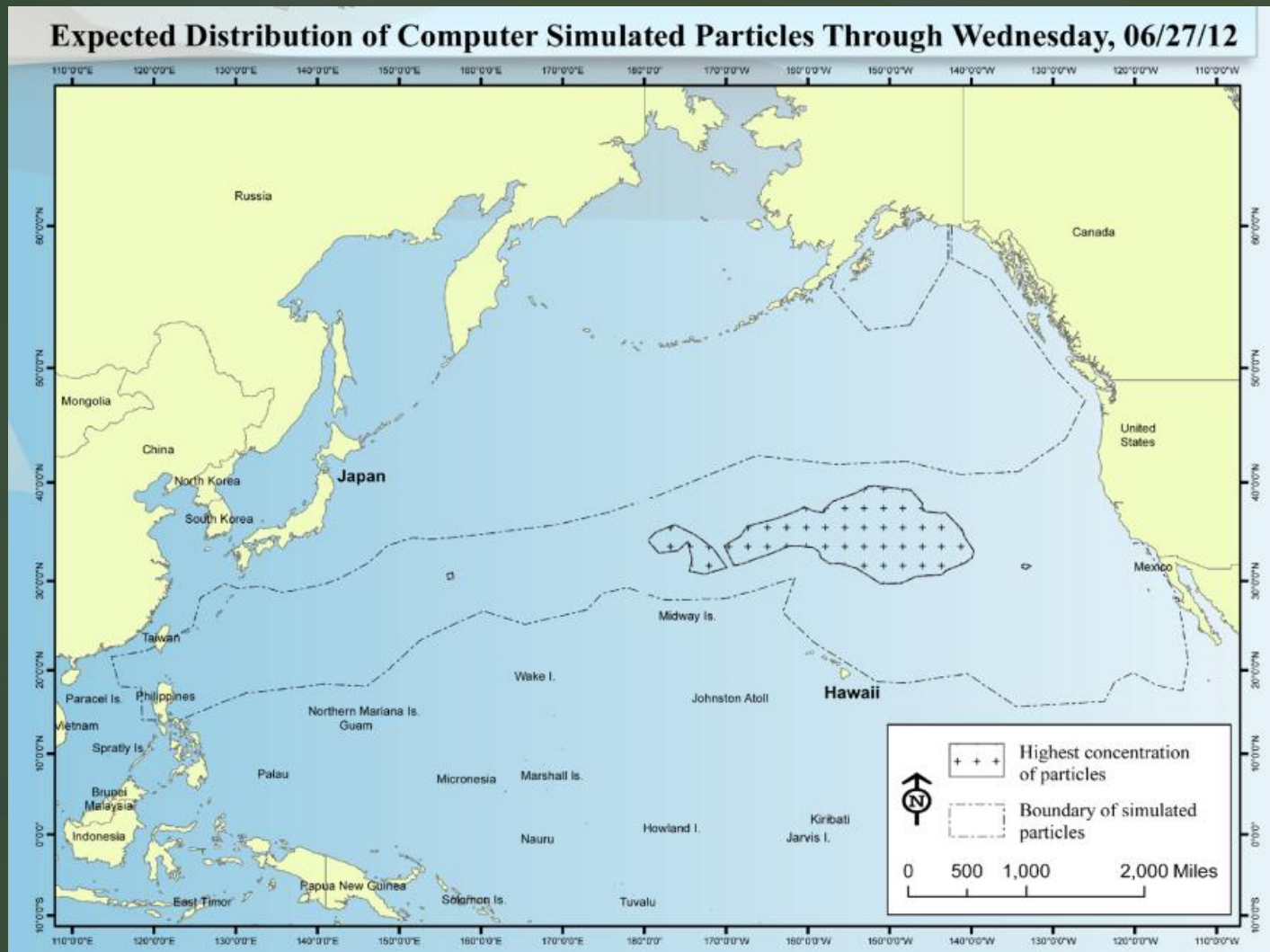
- ✔ IHT op-ed on OA by Lubchenco and Sir John Beddington
- ✔ Announcement of Int'l Monitoring Coordination Ctr: Monaco

Line and Staff Offices and Cross-line Programs:

Accomplishments & Challenges

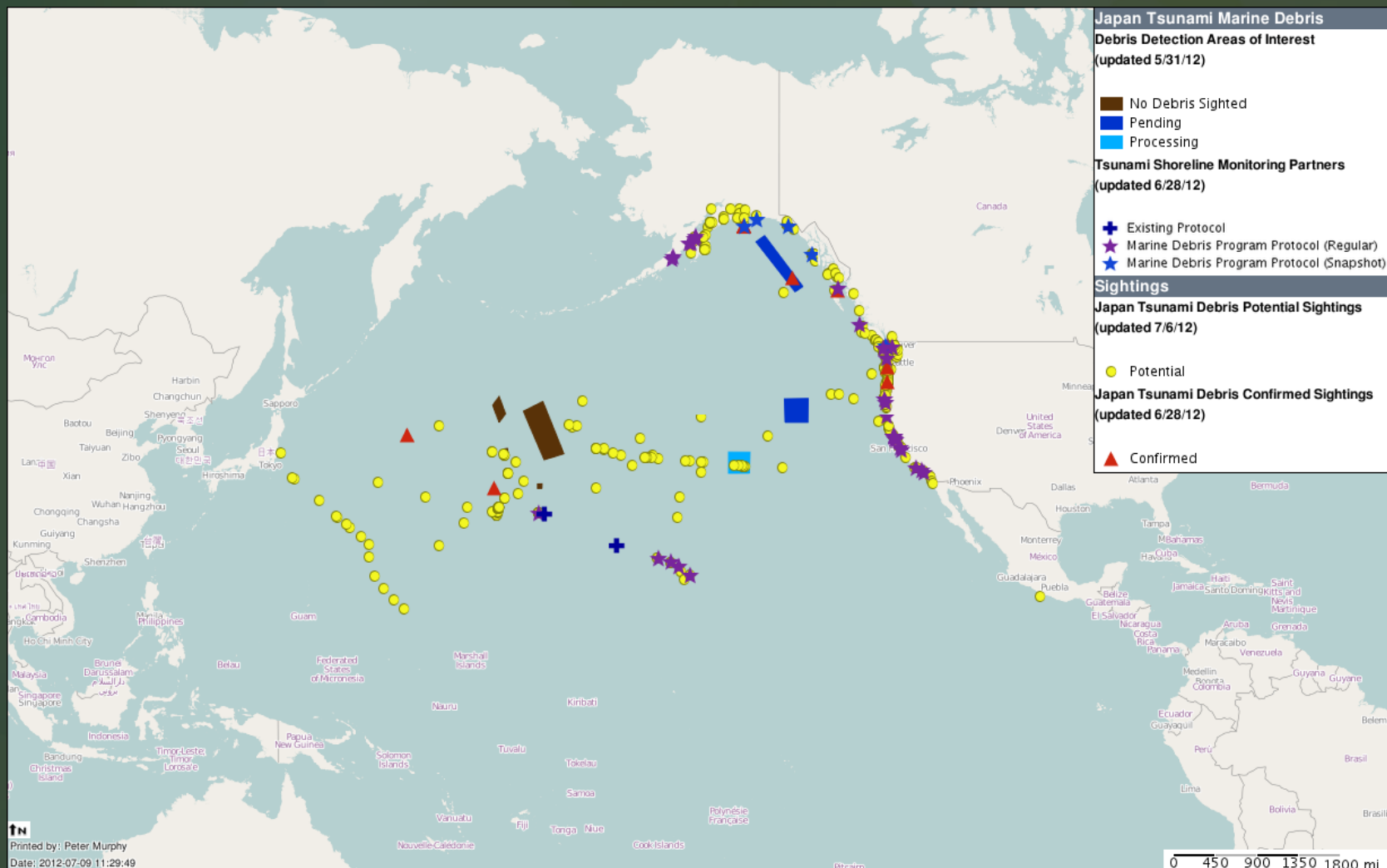


Marine Debris GNOME Model NOS



MARINE DEBRIS SIGHTINGS

NOS



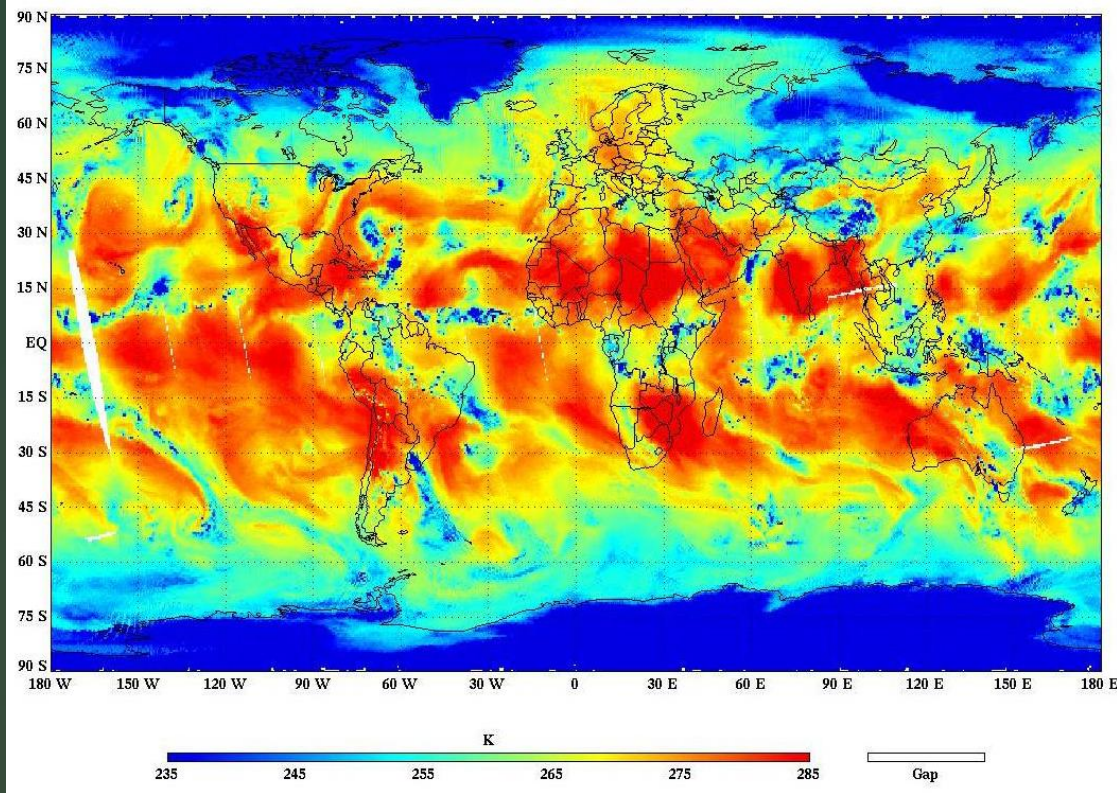
MARINE DEBRIS DETECTION NOS



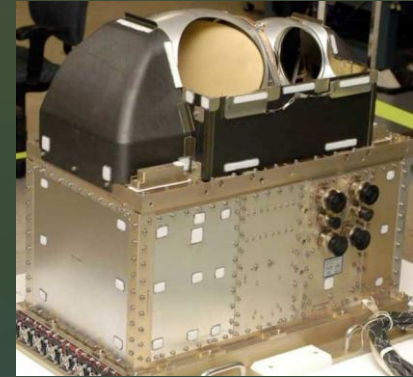
CHALLENGE
Communicating Risks Accurately

SUOMI NPP OPERATIONS

NESDIS



ATMS channel 18 data, which measures water vapor in the lower atmosphere



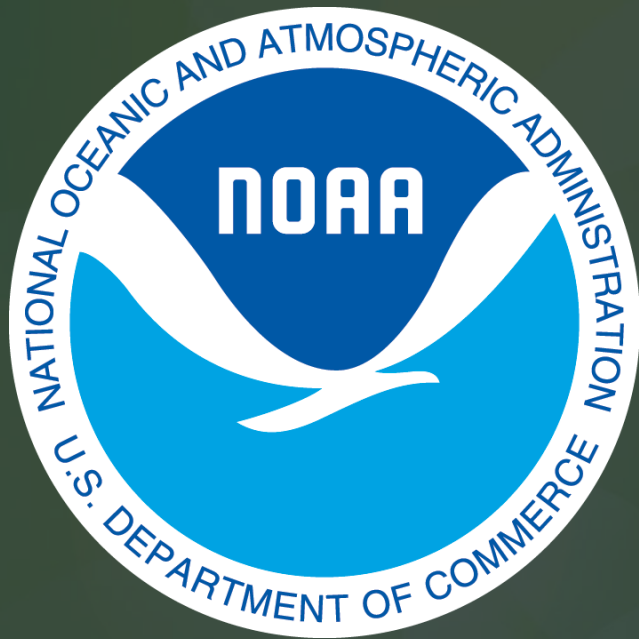
ATMS Instrument
Advanced Technology
Microwave Sounder

CHALLENGE

Developing Satellite Architecture in Declining Budget Environment

EMBLEM, FINANCES & FUTURE NWS

Emblem Licensing



Social Science Research
to Build a Weather Ready Nation



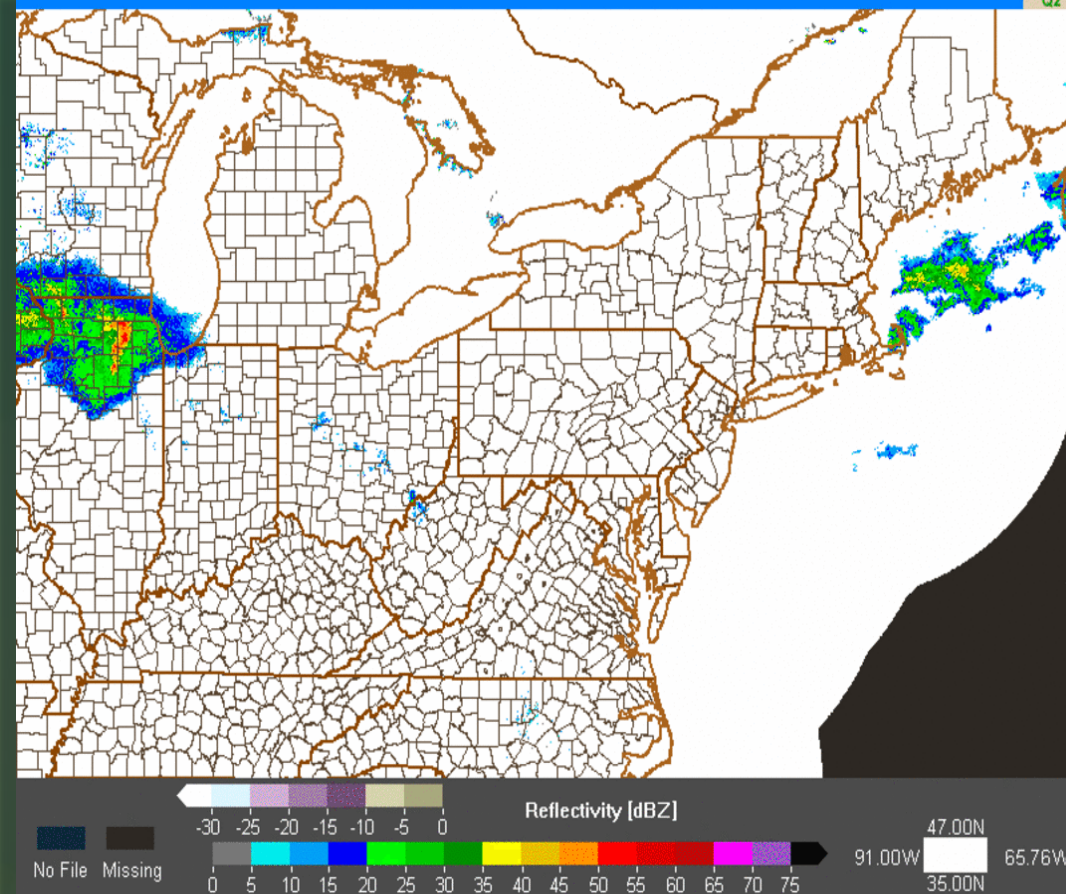
CHALLENGE

Post Reprogramming: Charting the Future of the NWS

Observed Radar Reflectivity

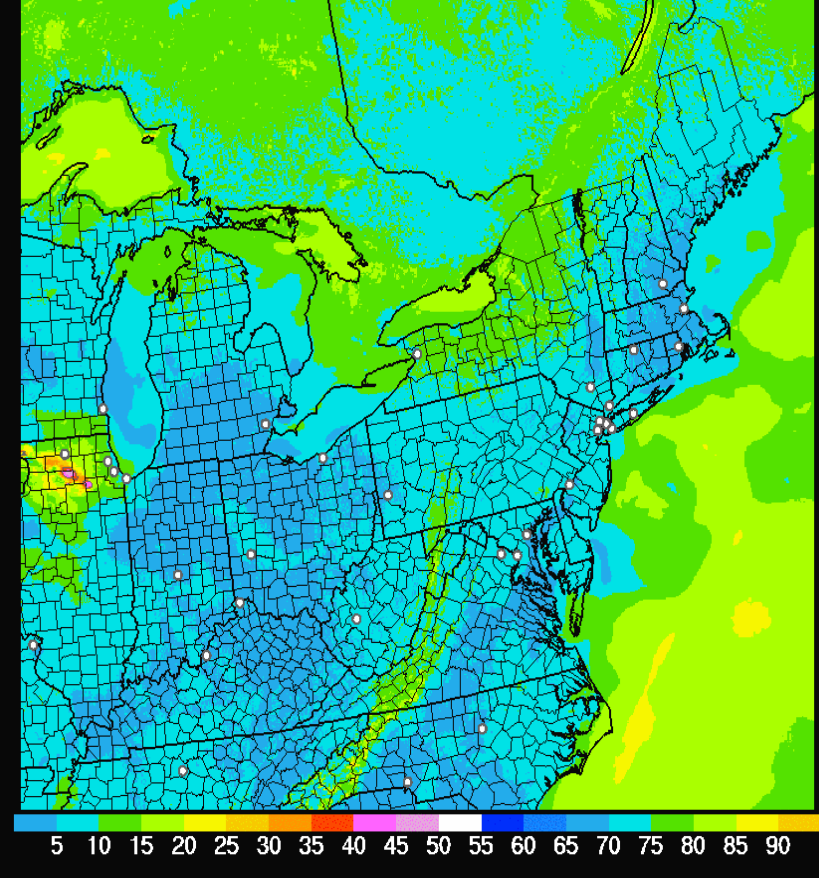
Composite Reflectivity
Derived From Mosaic3D

Valid At:
06/29/2012 16:00:00 UTC



Predicted Winds

HRRR 06/29/2012 (15:00) 1h fcst - Experimental
Valid 06/29/2012 16:00 UTC
Max 10m Windspeed (over previous hour) (kt)



High Resolution Rapid Refresh Model run on ESRL Supercomputer



STATE OF THE CLIMATE REPORT & NIDIS PRODUCTS

Climate

STATE OF THE CLIMATE IN 2011

ncdc.noaa.gov/bams-state-of-the-climate/2011.php

Special Supplement to the
Bulletin of the American Meteorological Society
Vol. 93, No. 7, July 2012



Quarterly Climate Impacts and Outlook

Western Region
June 2012

National - Significant Events for March - May 2012

Significant Events for May and Spring 2012



Highlights for the West

Mountain snowpack in the Northwest continued to increase due to below-average temperatures and above-average precipitation.

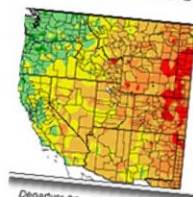
Sub-par mountain snowpack in the Southwest rapidly disappeared in response to exceptional warmth and lack of moisture.

Critical fire conditions (low relative humidity, high wind, drought conditions) persisted across much of the Southwest, allowing wildfires to develop and spread rapidly.

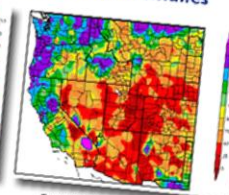
Southwest winds in excess of 50 mph drove a dust storm into the Four Corners region which combined with wildfire smoke to reduce regional visibility and air quality.

Equatorial Pacific sea surface conditions have transitioned from La Niña to ENSO-neutral conditions. These conditions are expected to continue through the summer.

Regional - Climate Overview for March - May 2012
Temperature and Precipitation Anomalies

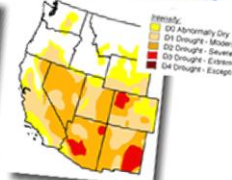


Departure from Normal Temperature (°F)
3/1/2012 - 5/31/2012



Percent of Normal Precipitation (%)
3/1/2012 - 5/31/2012

Drought in the West



US Drought Monitor
6/5/2012

he temperature anomalies shown in the left panel indicate that most of the interior West had above-normal temperatures (warm colors), with slightly cooler-than-normal temperatures in the Northwest and the northern and central California coastal region. he Pacific Northwest and much of California had well above-normal precipitation, while most of the interior West received much less precipitation than normal. Oregon had the wettest spring in the last 118 years and Washington had the third wettest. (Provisional temperature and precipitation data courtesy of the High Plains Regional Climate Center, www.hprcc.unl.edu.) he US Drought Monitor shows abnormally dry to extreme drought conditions in many parts of the West. (The Drought Monitor is a collaborative product from the USDA, NOAA and National Drought Mitigation Center, www.droughtmonitor.unl.edu/monitor.html.)

Contacts: Robert Webb (Robert.S.Webb@noaa.gov)

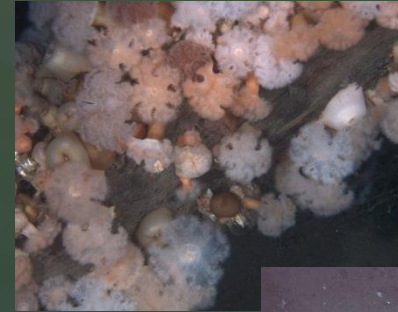
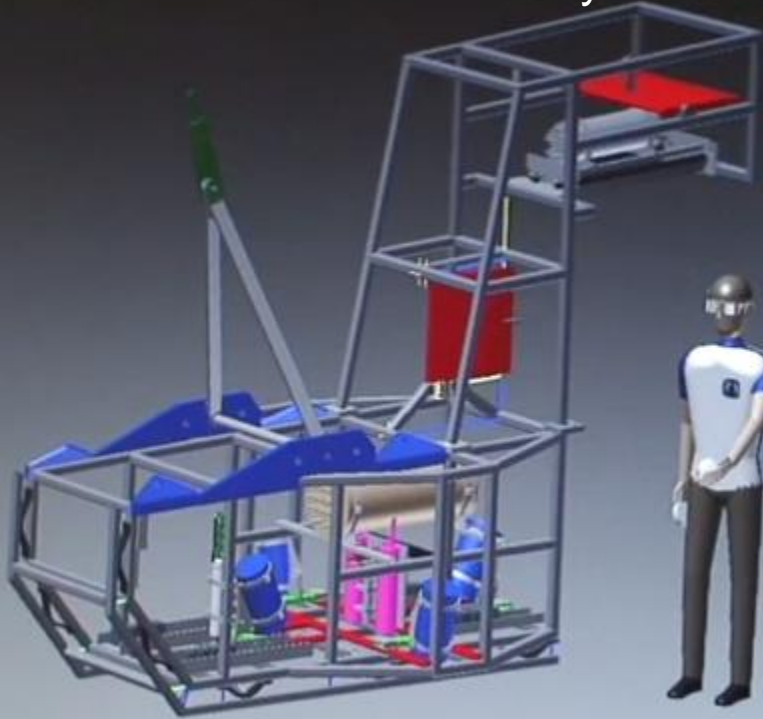
Western Region Quarterly Climate Impacts and Outlook | June 2012

CHALLENGE

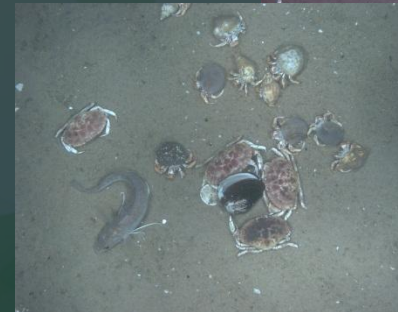
Addressing the Societal Issues without a Climate Line Office

ADVANCED SAMPLING TECHNOLOGIES NMFS

HabCam IV: NOAA/NMFS Stereo System



HabCam Imagery



CHALLENGE
Improving and Funding Stock Assessments

NEW RESEARCH VESSELS & RISING COSTS OMAO

Reuben Lasker



CHALLENGE

Rising ship maintenance and fuel costs

NextGen Standards & Recognition Education



The screenshot shows the homepage of the Next Generation Science Standards website. At the top, there is a navigation bar with links for News, FAQ, and Contact. Below this is a search bar and a sign-up form for email updates. The main content area features a green header with the text "The Next Generation Science Standards". Below this, there is a paragraph about the review period for the first public draft of the standards. To the right, there is a "What's New?" section with a link to read about the development process. On the left, there is a sidebar with links to "NGSS Structure", "NGSS May Draft Front Matter", and "What's different about the NGSS?". Below the sidebar, there is a photograph of a person using a laptop in a field.

www.nextgenscience.org/next-generation-science-standards



CHALLENGE
Recognition as 'core' to NOAA's mission

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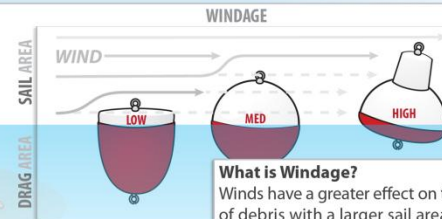
Marine Debris GNOME Model

Modeled Movement of the Marine Debris Generated by the March 2011 Japan Tsunami

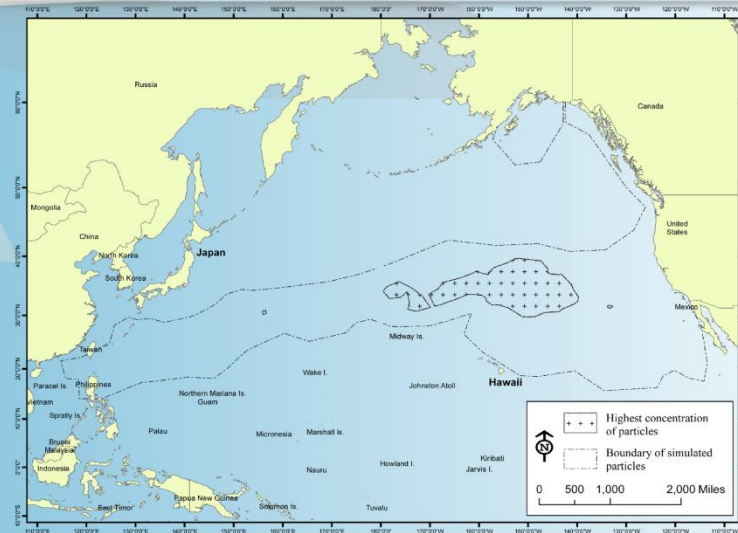
On March 11, 2011, an estimated 5 million tons of debris washed out by the tsunami

Estimated 30% floated away and dispersed

Estimated 70% sank near Japan



Expected Distribution of Computer Simulated Particles Through Wednesday, 06/27/12



- Japan Ministry of the Environment estimates that 5 million tons of debris washed into the ocean.
- They further estimated that 70% of that debris sank near the coast of Japan soon after the event.
- Model Results: High windage items may have reached the Pacific Northwest coast as early as winter 2011-2012.
- Majority of modeled particles are still dispersed north and east of the Hawaiian Archipelago.
- NOAA expects widely scattered debris may show up intermittently along shorelines for a long period of time, over the next year, or longer.

NOAA used a computer model to simulate the movement of tsunami debris from March 11, 2011, to the present day. This GNOME model (General NOAA Operational Modeling Environment) simulation is based on ocean surface currents from the US Navy (the Hybrid Coordinate Ocean Model) and winds from NOAA (the NOAA blended wind product). The computer model simultaneously released 1,000 simulated particles from each of 8 locations on the Japan coastline where tsunami wave heights were 3.5 meters or greater. Particles were randomly assigned windage values from 1-5%, meaning that they were moved not only by ocean currents, but were also moved by 1-5% of wind speed in the downwind direction. The dotted black line contains 95% of all simulated particles. The cross-hatched area indicates the region of the highest concentration of simulated debris with 1% windage at the end of the simulation. For more details on this model, please visit marinedebris.noaa.gov. Have you seen tsunami debris? Report it to: DisasterDebris@noaa.gov

High Resolution Rapid Refresh

A new weather prediction model being tested at:

**Earth System Research Lab/
Global Systems Division**

HRRR forecast skill for Mid-Atlantic Derecho
case of 29-30 June 2012

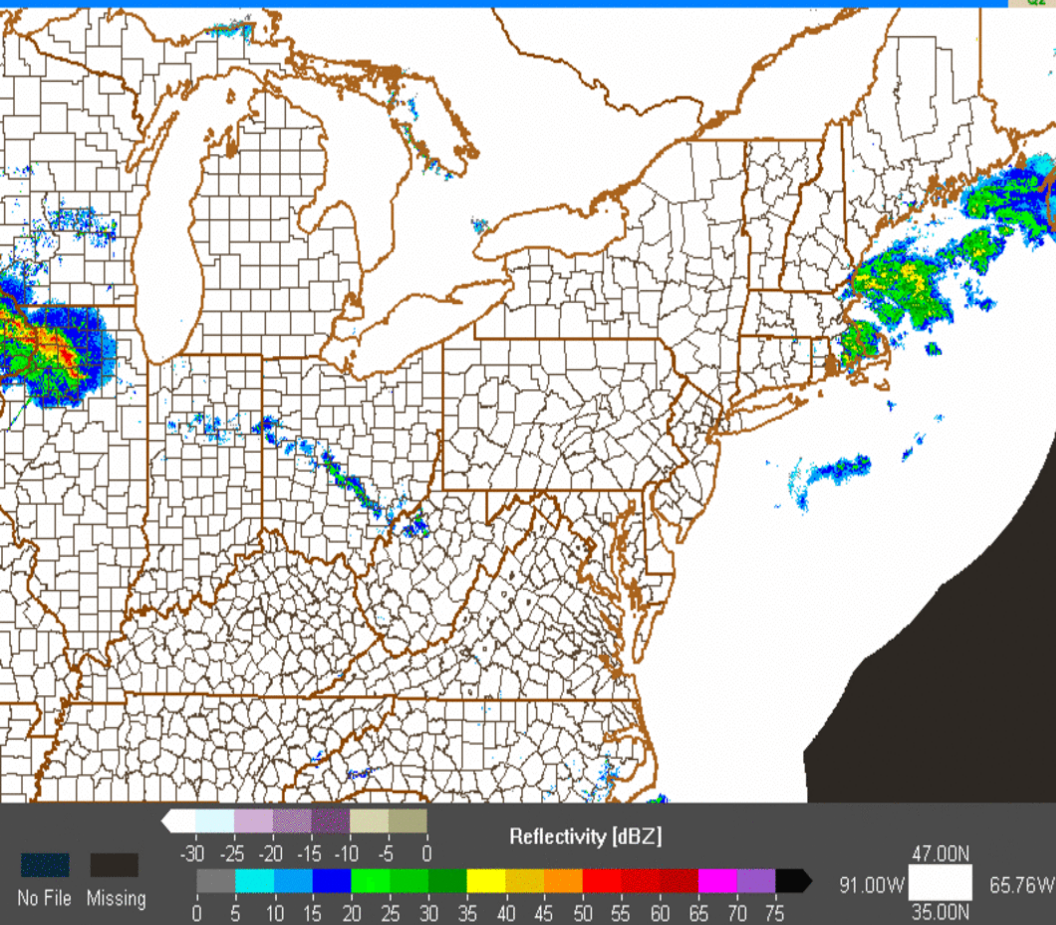
Steve Weygandt and Stan Benjamin

Observed Radar Prediction

Composite Reflectivity

Derived From Mosaic3D

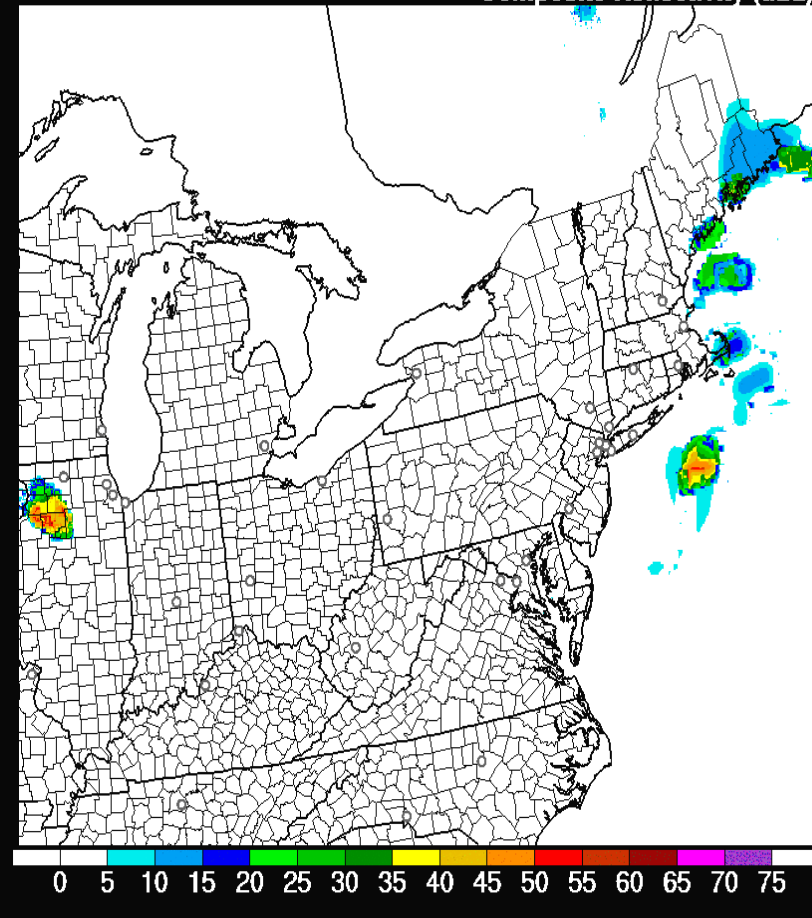
Valid At:
06/29/2012 15:00:00 UTC



Model

HRRR 06/29/2012 (15:00) 00:00 hr fcst - Experimental

Valid 06/29/2012 15:00 UTC
Composite Reflectivity (dBZ)



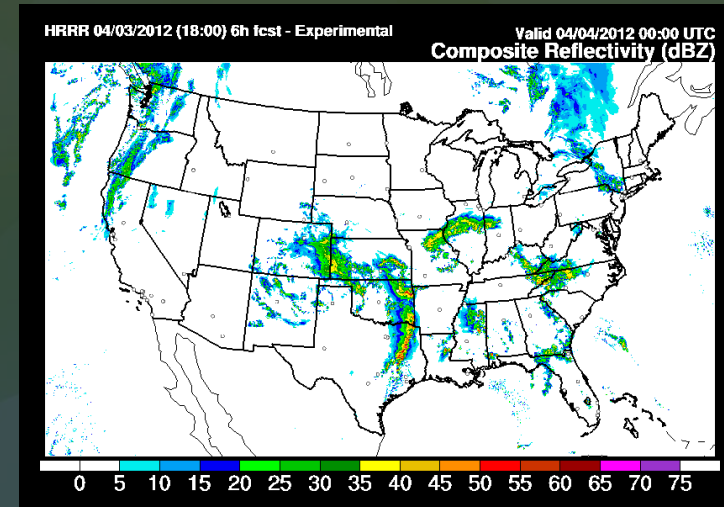
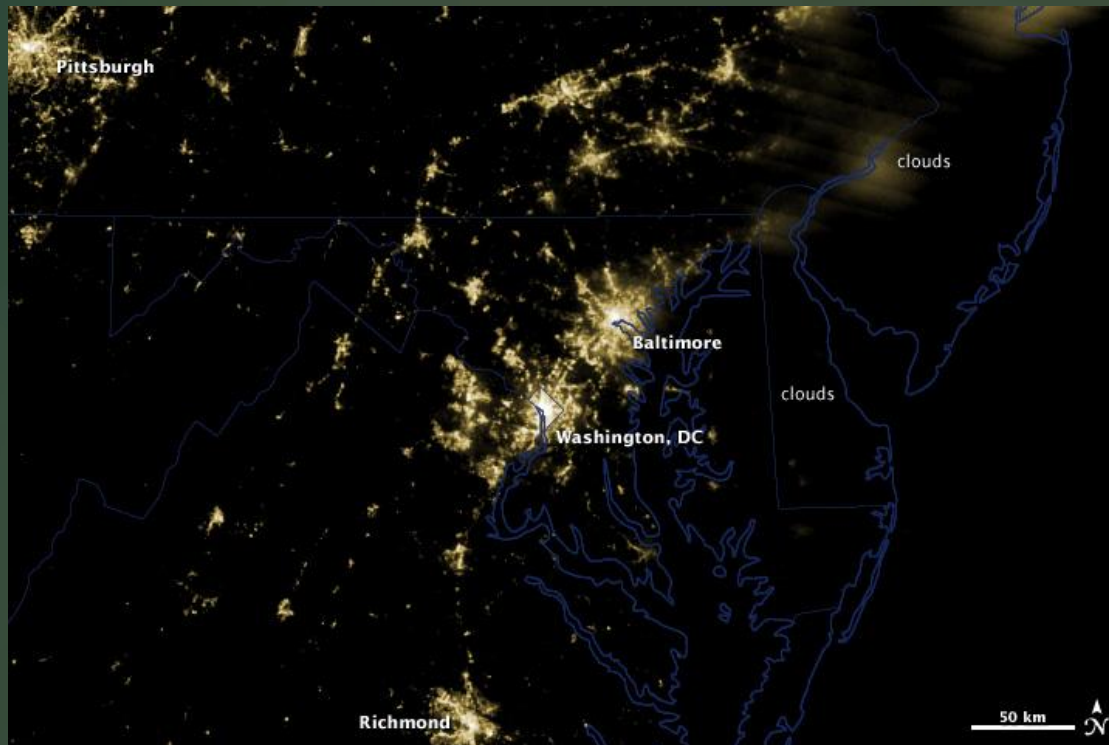
High Resolution Rapid Refresh Model run on ESRL
Supercomputer



MODELS & DATA

OAR

Suomi Lights @ Night Image After Derecho Event



High Resolution Rapid Refresh
Model Example

CHALLENGE

Adequate data from observing systems

ESRL/GSD's HRRR model predicted a 65 knot gust in the DC area 12 hours in advance.

